


# Exhibit 9

**U.S. Patent No. 6,862,179 – Infringement Claim Chart**

Claim 1	Exemplary Evidence of Infringement by Evoque
<p>[1pre] A method of cooling a plurality of racks in a data center, said method comprising:</p>	<p>Evoque’s data centers use a method of cooling a plurality of racks in a data center.</p> <p>For example, Evoque uses Vertiv (Liebert) cooling units in the colocation data center. Liebert cooling units are controlled by Liebert’s iCOM Intelligent Communication and Monitoring system.</p>  <p><a href="https://www.youtube.com/watch?v=OmV1SFy5cEg">https://www.youtube.com/watch?v=OmV1SFy5cEg</a> at 1:43.</p> <p>Evoque also, or alternatively, uses Vigilent’s dynamic cooling management which optimizes the airflow, and automatically finds and eliminates hot spots.</p>

**EVOQUE** Cyxtera

SOLUTIONS ▾

DATA CENTERS ▾

# MAKING CONNECTIONS WITH VIGILENT

This year we have been busy working with **BGIS** and **Vigilent** to install their cooling optimization tools in all of our US data centers.

<https://www.evoquedcs.com/blog/making-connections-with-vigilent>

## Improving Evoque's Energy Efficiency with Vigilent delivered by BGIS

When Evoque began looking for a dynamic cooling solution that could help improve energy efficiency in its colocation data centers, we consulted with BGIS' GCET Professional Services and ultimately chose the [Vigilent Dynamic Cooling Management System](#). Leveraging the latest innovations in Internet of Things (IoT) sensors and AI applications, Vigilent's integrated system consists of four interconnected components:

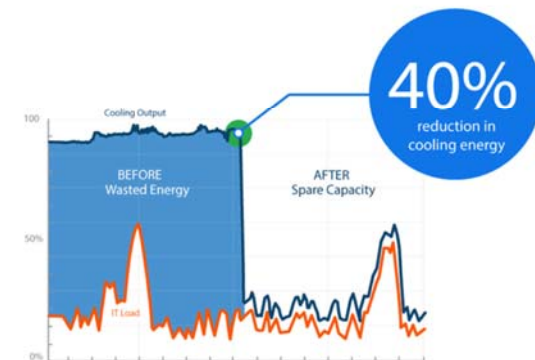
<https://www.evoquedcs.com/blog/evoque-employs-ai-to-improve-data-center-efficiency>

### VIGILENT CONTINUOUSLY MATCHES COOLING OUTPUT TO HEAT LOAD

#### Optimized airflow eliminates hot spots.

Vigilent continuously optimizes the airflow in your facility, delivering improved reliability and availability. The system automatically finds and eliminates hot spots, while its comprehensive reports and tools facilitate easier operations management.

Our system delivers the right amount of cooling exactly where it's needed. This typically results in up to a 40% reduction in carbon emissions and your cooling energy bill. We achieve that with sophisticated AI-based technology that learns your environment and adapts to change.



<https://www.vigilent.com/who-we-serve/by-facility/data-centers/>.

Evoque also, or alternatively, uses Schneider's cooling optimization to continuously optimize air flow in its colocation data centers.

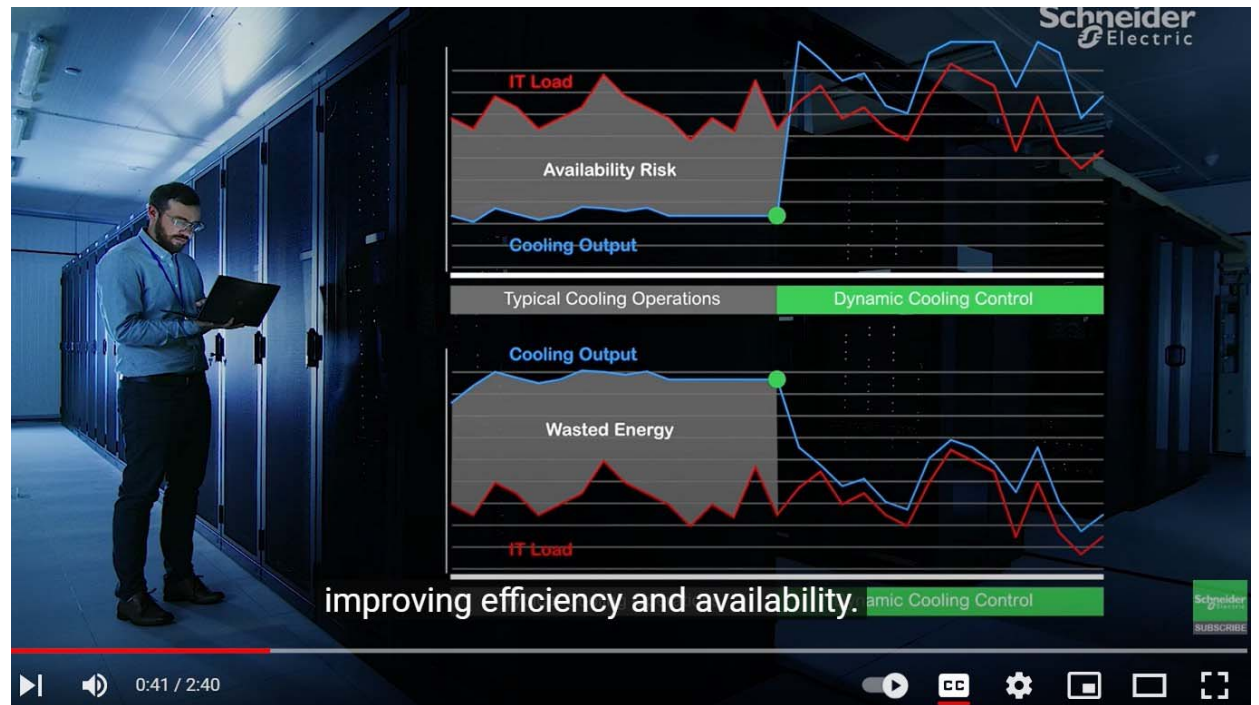
## DCIM in Evoque Data Centers

As part of an ongoing effort to improve performance and efficiency across multiple colocation facilities around the world, Evoque Data Center Solutions has made large investments in DCIM tools. Partnering with [Schneider Electric](#), one of the world's leading DCIM providers, Evoque has implemented a combination of on-premises and cloud-based solutions to maximize visibility and control over its data center infrastructure.

Each colocation site has adopted the [StruxureWare Data Center Expert](#) DCIM to tie multiple data center devices, sensors, and equipment into a single, user-friendly management platform. In addition to providing enhanced visibility and allowing personnel to quickly install and deploy new infrastructure devices, this powerful DCIM also works hand in hand with the [cooling management solution from Vigilant](#) to further enhance energy efficiency.

<https://www.evoquedcs.com/blog/what-is-dcim-software-and-why-does-it-matter><https://www.evoquedcs.com/blog/making-connections-with-the-energy-star-program-for-data-centers/tag/esg>

Evoque has already deployed next-generation DCIM software by partnering with Schneider Electric, a world-class DCIM provider and leader in the industry. The next-generation DCIM has improved by moving to cloud-based deployments, having easier access of management, built-in disaster recovery mechanisms, and enhanced intelligence. It also offers machine learning and real-time analytics, while collecting data and pooling it with data from other organizations in an anonymized manner for benchmarking. Data points can scale rapidly to hundreds of thousands of endpoints.



<https://www.youtube.com/watch?v=yFMS-88wXn8>, at 0:32.

[1a] activating a cooling device and opening a controllable partition configured to vary a supply of cooling fluid within a zone of said data center, said zone including at least one associated rack of said plurality of racks;

Evoque activates a cooling device and opening a controllable partition configured to vary a supply of cooling fluid within a zone of said data center, said zone including at least one associated rack of said plurality of racks.

For example, Liebert's iCOM Intelligent Communication and Monitoring fluid economizer system activates the flow of chilled water/glycol, and varies cooling capacity by adjusting a motorized ball valve (controllable partition).

#### **7.1.4 Temperature Control with a Fluid Economizer**

When an economizer is installed, the cooling requirement (determined by the temperature proportional band) is addressed first by the economizer's secondary cooling, if the economizer cooling capacity is insufficient, the compressor(s) begin cooling to bring the room air temperature down to the temperature setpoint.

The fluid economizer employs a motorized ball valve that controls the flow of chilled water/glycol to provide a cooling capacity from 0% to 100%.

[https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual\\_sl-31075.pdf](https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf), p. 110.

Evoque also, or alternatively, uses Vigilent's optimized airflow system which utilizes artificial intelligence to remotely control air conditioners to provide the right amount of cooling exactly where and when it is needed.

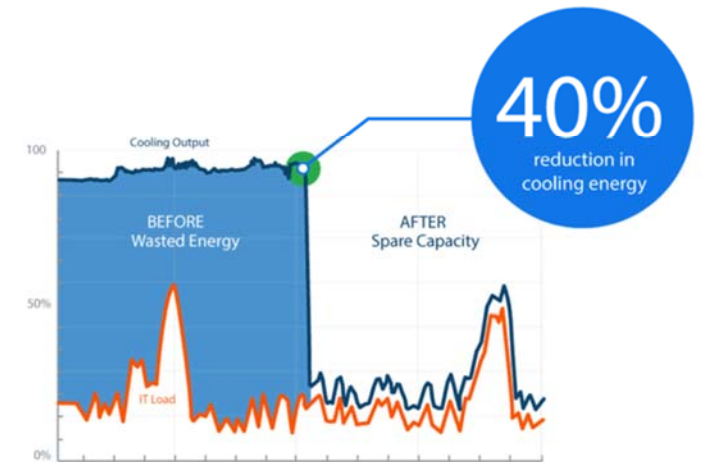


## VIGILENT CONTINUOUSLY MATCHES COOLING OUTPUT TO HEAT LOAD

### Optimized airflow eliminates hot spots.

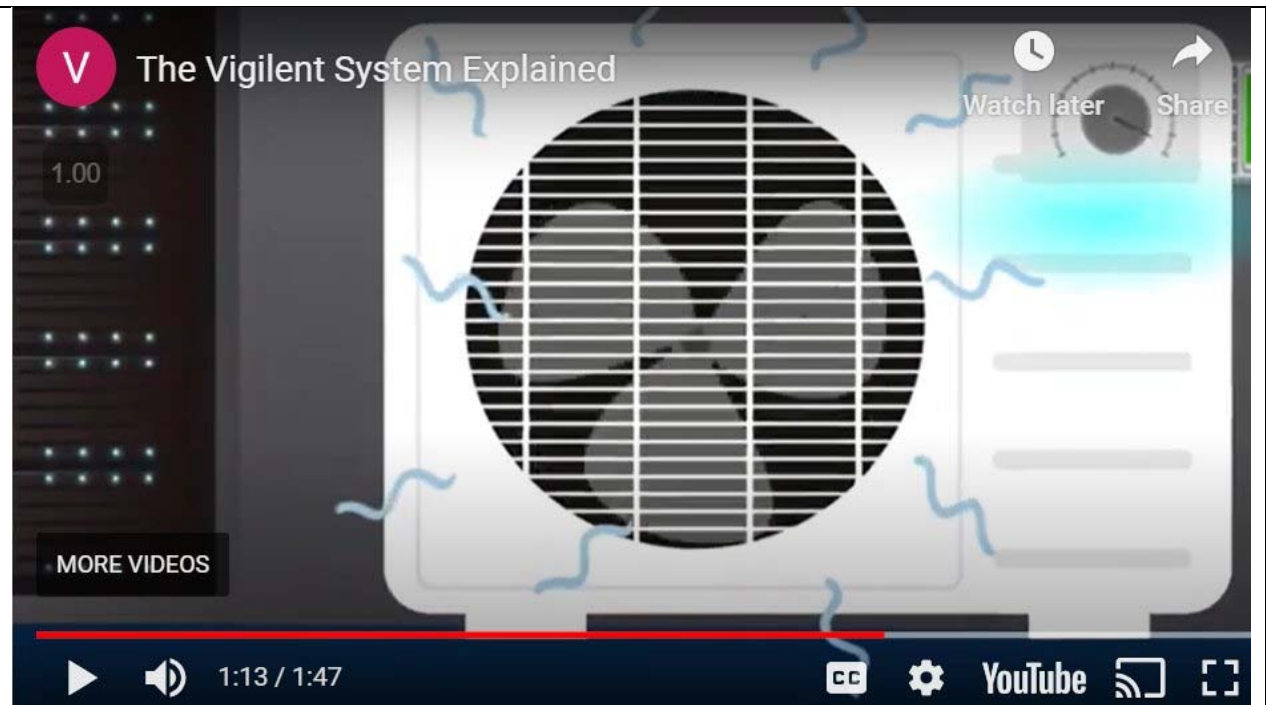
Vigilent continuously optimizes the airflow in your facility, delivering improved reliability and availability. The system automatically finds and eliminates hot spots, while its comprehensive reports and tools facilitate easier operations management.

Our system delivers the right amount of cooling exactly where it's needed. This typically results in up to a 40% reduction in carbon emissions and your cooling energy bill. We achieve that with sophisticated AI-based technology that learns your environment and adapts to change.



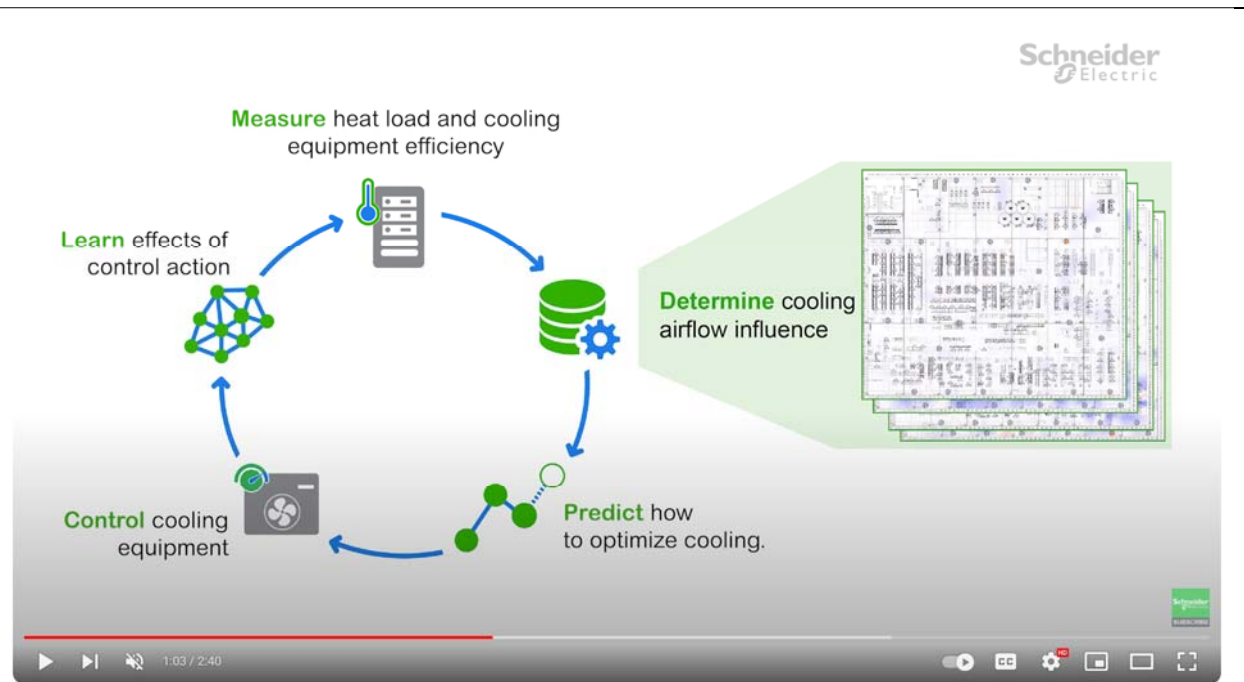
<https://www.vigilent.com/who-we-serve/by-facility/data-centers/>.





<https://www.vigilent.com/the-vigilent-system-explained/>, at 1:13.

Evoque also, or alternatively, uses Schneider's Cooling Optimize which is a closed-loop system that reacts to real-time data, automatically identifies and eliminates hot spots and helps diagnose potential facility risks.



EcoStruxure™ IT Advisor: Cooling Optimize - dynamic, intelligent cooling | Schneider Electric

<https://www.youtube.com/watch?v=yFMS-88wXn8>, at 1:03; [https://download.schneider-electric.com/files?p\\_enDocType=Brochure&p\\_File\\_Name=998-21764381\\_EcoStruxure\\_IT\\_Advisor\\_Cooling\\_Optimize.pdf&p\\_Doc\\_Ref=SPD\\_RMCR-9K5JG4\\_EN](https://download.schneider-electric.com/files?p_enDocType=Brochure&p_File_Name=998-21764381_EcoStruxure_IT_Advisor_Cooling_Optimize.pdf&p_Doc_Ref=SPD_RMCR-9K5JG4_EN).

[1b] sensing the temperature of said at least one associated rack;

Evoque senses the temperature of said at least one associated rack.

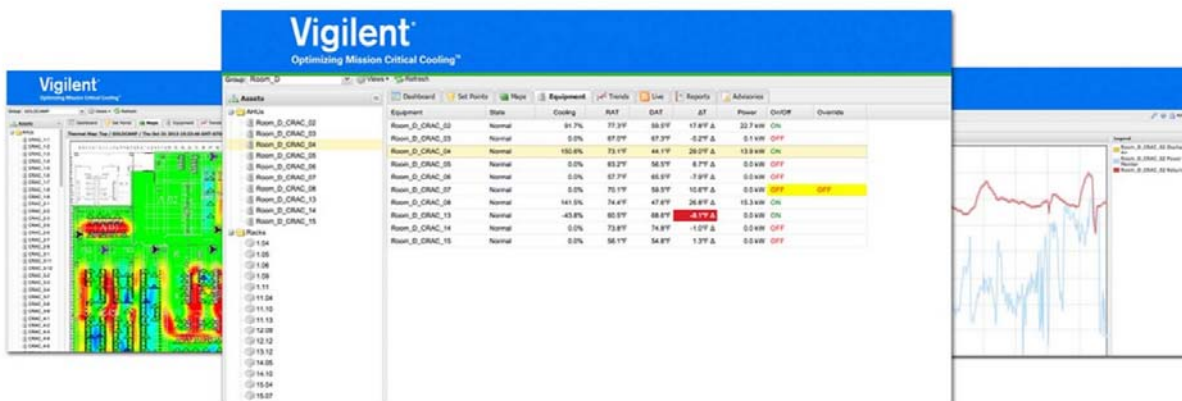
For example, Evoque uses Liebert cooling units and the Liebert cooling unit control system senses temperatures.

### 13.2 Installing Wired Remote Sensors

Up to 10 remote sensor modules, installed in the monitored racks and connected to the cooling unit, provide control and reference input to iCOM and building-management systems. Using remote, rack sensors combats cooling problems related to recirculation air, uneven rack loading, and air distribution.

[https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual\\_sl-31075.pdf](https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf), p. 180.

Evoque also, or alternatively, uses Vigilent's Optimizing Mission Critical Cooling to sense temperatures.



#### EVERYDAY TOOLS

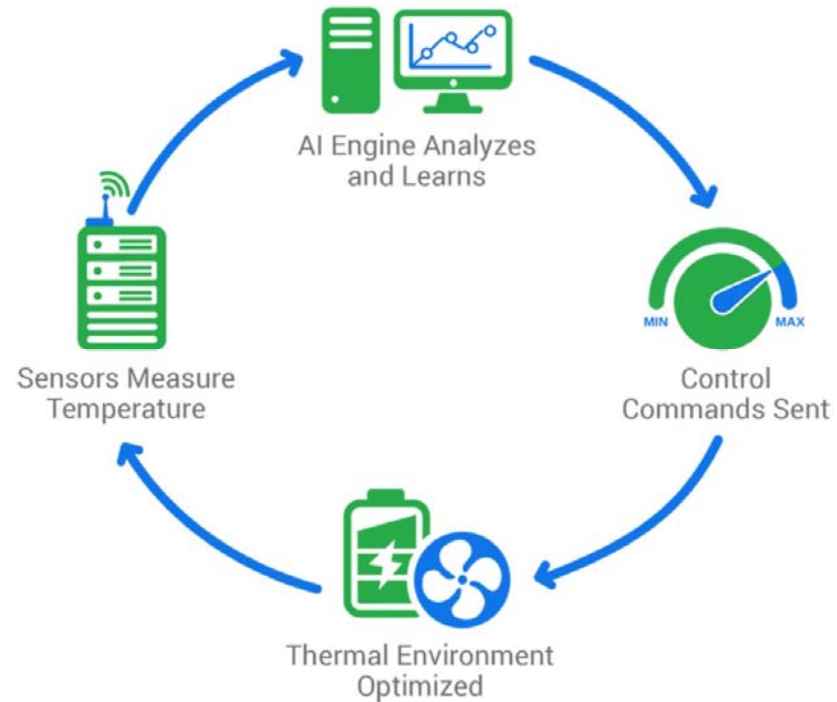
With our intuitive, at-a-glance system interface, checking the current status of your facility is always at your fingertips.

#### CHECK TEMPERATURES

With a few clicks, you can quickly dive down from a broad facility view into the real-time temperature data of one specific rack sensor.

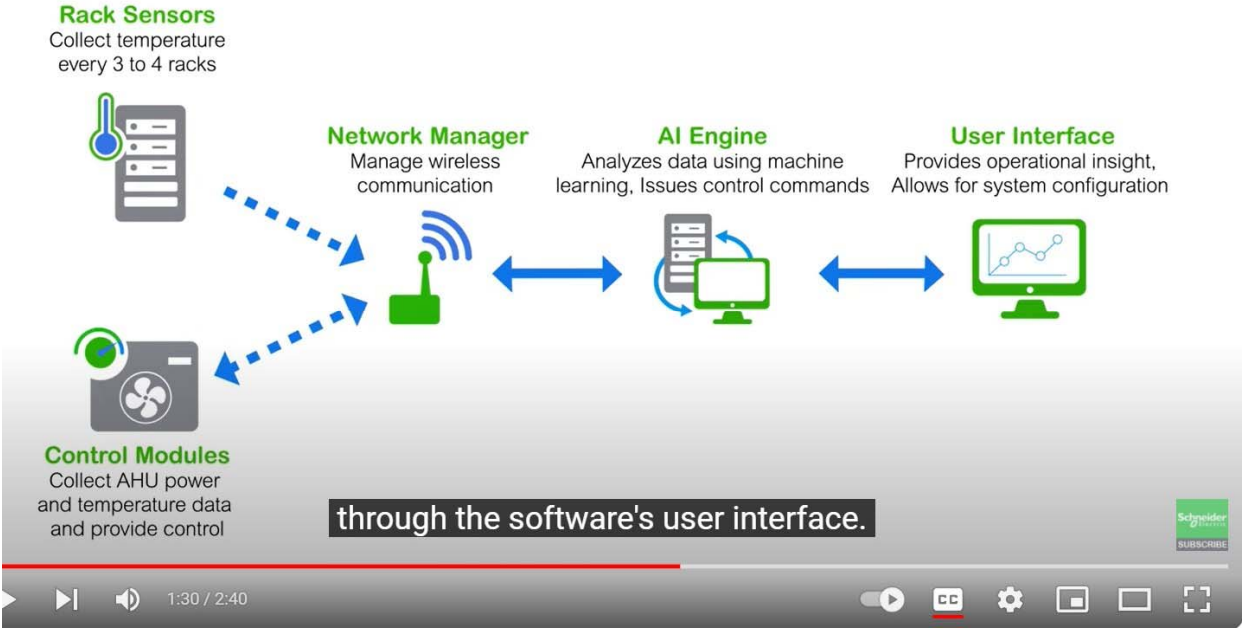
#### EASY TRENDING

Customize data to quickly surface the information you need.



<https://www.vigilent.com/products-and-services/dynamic-control/>.

Evoque also, or alternatively, uses Schneider's Cooling Optimize system which utilizes a dense array of temperature sensors to determine exactly where the heat load is within the data center. Data is wirelessly transmitted to network gateways, aggregated, and sent to a purpose-built appliance where it is analyzed by control software. Control commands are then delivered to the cooling equipment. See [https://download.schneider-electric.com/files?p\\_enDocType=Brochure&p\\_File\\_Name=998-21764381\\_EcoStruxure\\_IT\\_Advisor\\_Cooling\\_Optimize.pdf&p\\_Doc\\_Ref=SPD\\_RMCR-9K5JG4\\_EN](https://download.schneider-electric.com/files?p_enDocType=Brochure&p_File_Name=998-21764381_EcoStruxure_IT_Advisor_Cooling_Optimize.pdf&p_Doc_Ref=SPD_RMCR-9K5JG4_EN).

	 <p><b>Rack Sensors</b> Collect temperature every 3 to 4 racks</p> <p><b>Control Modules</b> Collect AHU power and temperature data and provide control</p> <p><b>Network Manager</b> Manage wireless communication</p> <p><b>AI Engine</b> Analyzes data using machine learning, Issues control commands</p> <p><b>User Interface</b> Provides operational insight, Allows for system configuration</p> <p>through the software's user interface.</p> <p><a href="https://www.youtube.com/watch?v=yFMS-88wXn8">https://www.youtube.com/watch?v=yFMS-88wXn8</a>, at 1:30.</p>
<p>[1c] determining whether said sensed temperature is within a predetermined temperature range; and</p>	<p>Evoque determines whether said sensed temperature is within a predetermined temperature range.</p> <p>For example, Evoque uses the Liebert iCOM system which is able to identify if the temperature is at the setpoint value, and change the response to the varied flow field based on length of time temperature has deviated, and amount of deviation from setpoint.</p>

#### **Temperature Integration Time**

Adjusts amount of cooling/heating based on the length of time the temperature has deviated from the setpoint. The time selected is the amount of time it will take cooling capacity to reach 100%. For example, if three minutes is selected, cooling capacity will increase to 100% in three minutes.

NOTE: Three to five minutes of integration time is adequate for most applications. See [Considerations when Using PI Temperature Control](#) on page 28 .

NOTE: Only used when Temperature Control Type is PI.

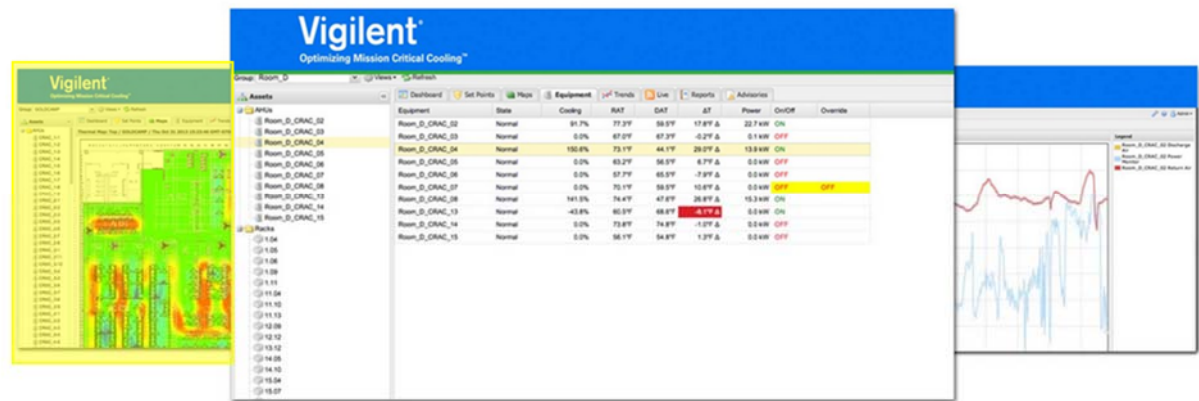
#### **Temperature Proportional Band**

Adjusts the activation point of cooling/heating components based on deviation from setpoint by placing half of the selected value on each side of the temperature control setpoint. A smaller number causes faster reaction to temperature changes.

NOTE: Setting this too low causes short cycling of compressors.

[https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual\\_sl-31075.pdf](https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf), p. 25.

Evoque also, or alternatively, uses Vigilent's Optimizing Mission Critical Cooling to check the temperatures within its data centers to determine whether the sensed temperature is within a predefined temperature range.

**EVERYDAY TOOLS**

With our intuitive, at-a-glance system interface, checking the current status of your facility is always at your fingertips.

**CHECK TEMPERATURES**

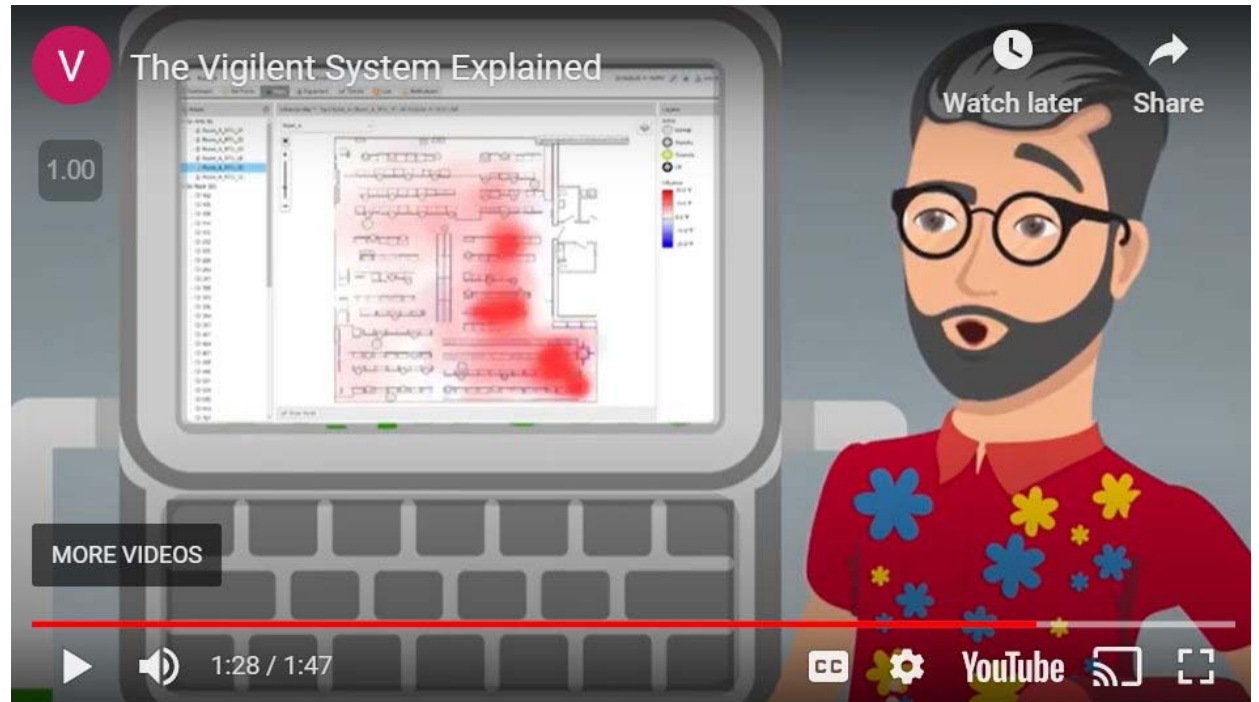
With a few clicks, you can quickly dive down from a broad facility view into the real-time temperature data of one specific rack sensor.

**EASY TRENDING**

Customize data to quickly surface the information you need.

<https://www.vigilent.com/who-we-serve/by-facility/data-centers/>.



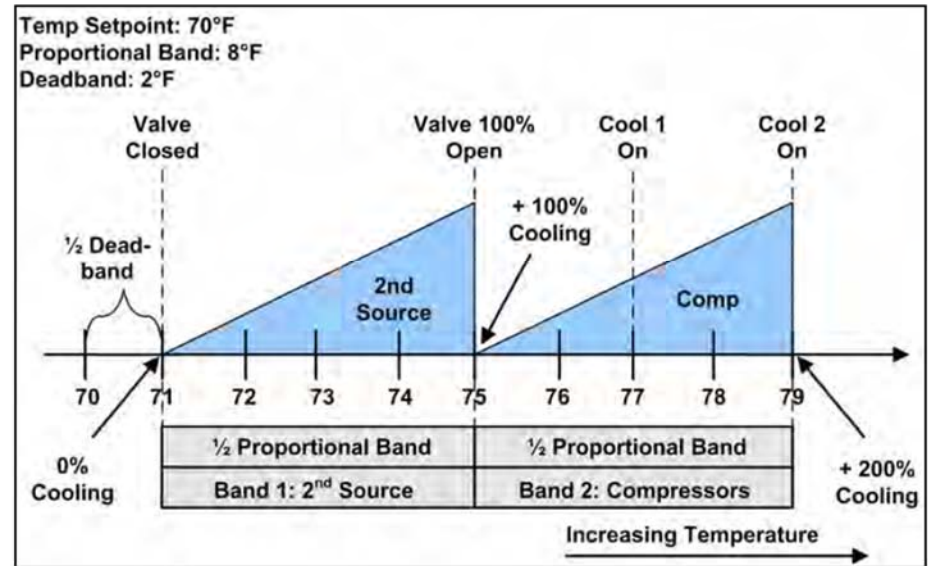


<https://www.vigilent.com/the-vigilent-system-explained/>, at 1:28.

Evoque also, or alternatively, uses Schneider's Cooling Optimize system to determine whether the said sensed temperature is within a predetermined temperature range, for example, by using the temperature compliance report.

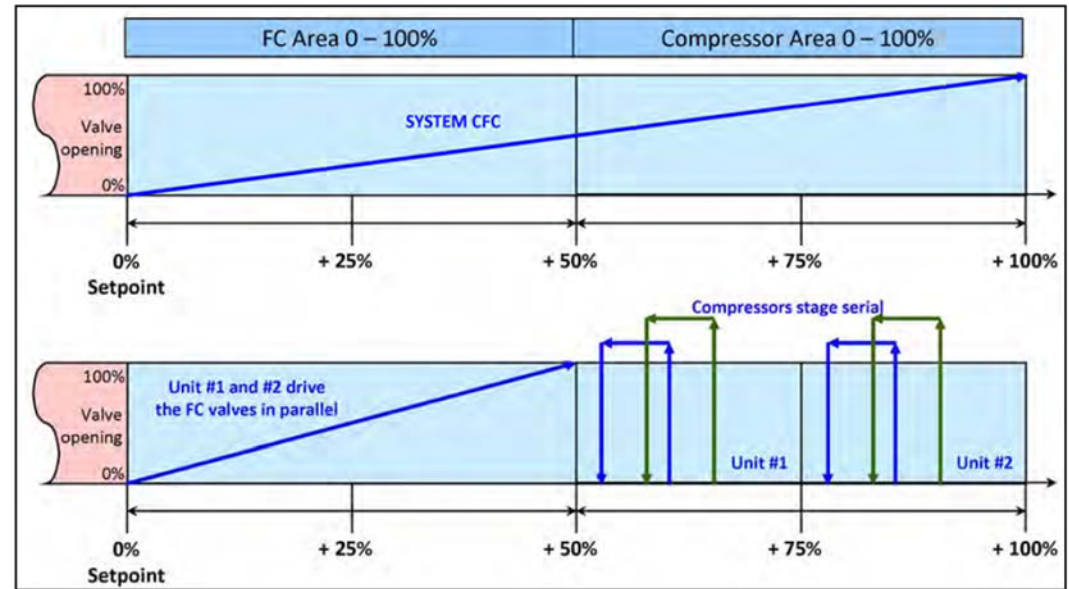
	<table border="1"> <tr> <td data-bbox="785 191 1182 248"><b>Reports</b></td><td data-bbox="1182 191 1969 248"></td></tr> <tr> <td data-bbox="785 248 1182 337">Benchmark report</td><td data-bbox="1182 248 1969 337">Verifies energy and cost savings, as well as greenhouse gas reductions, achieved through the use of dynamic cooling management.</td></tr> <tr> <td data-bbox="785 337 1182 467">Temperature compliance report</td><td data-bbox="1182 337 1969 467">Identifies if rack temperatures have complied with required set points, and the time period that racks have been in violation of the set point limits, enabling easy detection of potential physical infrastructure irregularities.</td></tr> </table> <p><a href="https://download.schneider-electric.com/files?p_enDocType=Brochure&amp;p_File_Name=998-21764381_EcoStruxure_IT_Advisor_Cooling_Optimize.pdf&amp;p_Doc_Ref=SPD_RMCR-9K5JG4_EN">https://download.schneider-electric.com/files?p_enDocType=Brochure&amp;p_File_Name=998-21764381_EcoStruxure_IT_Advisor_Cooling_Optimize.pdf&amp;p_Doc_Ref=SPD_RMCR-9K5JG4_EN</a>.</p>	<b>Reports</b>		Benchmark report	Verifies energy and cost savings, as well as greenhouse gas reductions, achieved through the use of dynamic cooling management.	Temperature compliance report	Identifies if rack temperatures have complied with required set points, and the time period that racks have been in violation of the set point limits, enabling easy detection of potential physical infrastructure irregularities.
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<p>[1d] manipulating said controllable partition to vary said supply of said cooling fluid to said zone in response to said sensed temperature being outside said predetermined temperature range.</p>	<p>Evoque manipulates said controllable partition to vary said supply of said cooling fluid to said zone in response to said sensed temperature being outside said predetermined temperature range.</p> <p>Evoque uses Liebert's iCOM system to manipulate the motorized ball valve (controllable partition) from 0% to 100% flow of chilled water/glycol.</p> <p><b>7.1.4 Temperature Control with a Fluid Economizer</b></p> <p>When an economizer is installed, the cooling requirement (determined by the temperature proportional band) is addressed first by the economizer's secondary cooling, if the economizer cooling capacity is insufficient, the compressor(s) begin cooling to bring the room air temperature down to the temperature setpoint.</p> <p>The fluid economizer employs a motorized ball valve that controls the flow of chilled water/glycol to provide a cooling capacity from 0% to 100%.</p> <p><a href="https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf">https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf</a>, p. 110.</p>						

Figure 3.17 Second Cooling Source and Two-Step Compressorized Cooling



[https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual\\_sl-31075.pdf](https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf), p. 69, Fig. 3.17.

Figure 3.18 Freecooling and Compressorized Operation



[https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual\\_sl-31075.pdf](https://www.vertiv.com/49b8b2/globalassets/shared/liebert-icom-user-manual_sl-31075.pdf), p. 70, Fig. 3.18.

Evoque also, or alternatively, uses Vigilent's cooling system to automatically eliminate hot spots in its data centers.

## AT A GLANCE

Cooling becomes a managed resource that reacts to real-time data, which reduces the chances of downtime.

### **Automated hot spot reduction**

The system can automatically removes 95% (or more) of hot spots and diagnoses how to treat the remaining problems through facility adjustments.

### **Instant results**

From the moment the system goes live, the energy savings and carbon emissions reductions are immediate.

### **Cost savings**

The system finds the perfect balance between delivering the right amount of cooling and the lowest possible energy expenditure.

### **Constantly adapting**

The AI engine constantly changes cooling when it detects new equipment and varying IT loads.

### **Analytics**

Our system turns mountains of current and historic data into focused, actionable information.

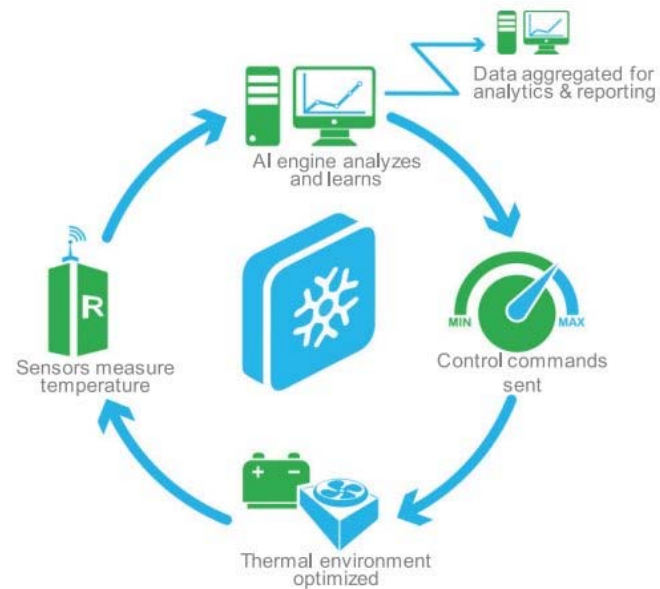
### **Risk mitigation**

System failsafes help avoid costly outages.

<https://www.vigilent.com/who-we-serve/by-facility/data-centers/>.

Evoque also uses Schneider's Cooling Optimize to adjust cooling output.

As IT load changes, the built-in machine learning automatically adjusts cooling output to match the dynamic data center environment.



[https://download.schneider-electric.com/files?p\\_enDocType=Brochure&p\\_File\\_Name=998-21764381\\_EcoStruxure\\_IT\\_Advisor\\_Cooling\\_Optimize.pdf&p\\_Doc\\_Ref=SPD\\_RMCR-9K5JG4\\_EN](https://download.schneider-electric.com/files?p_enDocType=Brochure&p_File_Name=998-21764381_EcoStruxure_IT_Advisor_Cooling_Optimize.pdf&p_Doc_Ref=SPD_RMCR-9K5JG4_EN).